The Pulse in Ancient Chinese Medicine

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MOST of the diagnostic techniques and therapeutic procedures of the practitioners of ancient Chinese medicine are beyond the comprehension and analysis of scientific western medicine. Some of these techniques are worthy of attention. They have been employed for centuries and are still used by many thousands of "physicians," often with good results. Furthermore, they are interesting because of the weird anatomical and physiological theories behind them. At least they were of interest to American physicians such as myself who spent some time during the war years working with the Chinese.

In his examination of the patient, the Chinese physician devotes himself almost wholly to the appearance of the tongue, lips and face, and to the character of the pulse. The value that the Chinese place on the interpretation of the pulse is implied in the proverb:

> He who revives man's life
> With three fingers (on the pulse)
> Is not a good statesman
> But a good doctor.

Pulse and circulation were studied in China at least two thousand years ago. The first known mention was in the Internal Medicine Classic, *Nei Ching*. This manuscript is said to have been written by the Yellow Emperor, Huang Ti (B.C. 2698-2598), with the aid of the wise physician Ch'i Pai. Hence doctors are sometimes spoken of as practitioners of the art of Ch'i and Huang. Recent researches indicate that this manuscript may have been written about the end of the Chou dynasty, B.C. 249. The first well-known exponent of the pulse was Pien Ch'iao (fifth century B.C.). The greatest of ancient Chinese surgeons, Hua To (A.D. 115-205) studied the pulse and described 200 varieties. Wang Shu-Ho (Chin dynasty, A.D. 280) was the greatest ancient authority on the pulse. He wrote the ten-volume Pulse Classic which is still widely used today. Another book, *The Secret of the Pulse*, which appeared about the period of The Five Dynasties (A.D. 907-960), is also ascribed to Wang Shu-Ho. It was probably written by another physician, Kao Yang-sheng.

In examining the pulse, the examiner uses the three middle fingers of his right hand. The thumb is placed on the dorsum of the wrist and the three fingers are placed on the wrist over the radial artery about half an inch apart. The fingers are used somewhat as if striking the keys of a piano. "The best time for taking the pulse is in the early morning at sunrise. The physician should keep cool and collected, first noting if his own breathing is in order . . . The normal ratio is four pulse beats to one respiration."

In females, the examiner feels first the right hand and then the left; in males, the left hand is first. I was unable to discover the reason for this routine. Children under five years of age are not examined by the pulse, but have their fingers inspected.

It is of interest that perhaps the Ghinese did appreciate the connection of the heart with circulation more than a thousand years before Harvey. In the previously mentioned *Nei Ching* it is written, "The heart regulates all the blood in the body . . . The blood flows in a circle and never stops." The Chinese have a theory of double circulation by which the "spirits," which are the vehicle of the Yin principle (male, heat) and the blood which conveys the Yang principle (female, moisture), are distributed through the body. The circulation begins in the lungs at three o'clock in the morning (the Hour of the Tiger) and completes the rounds in 24 hours. For the accommodation of this circulation, the Chinese practitioners count 12 principal canals—six pass from above downward and six from below upward. There are also accessory canals, eight of which run transversely and nine obliquely.[1]

LITTLE KNOWLEDGE OF INTERNAL ANATOMY

Generally speaking, the knowledge of the present-day practitioners of ancient Chinese medicine is in the same category as that of wesfern physicians prior to Vesalius. Chinese tradition is opposed to the disfigurement of the body before or after death. Internal operations were rarely performed; there were no autopsies. Accidental battle wounds were probably their only sources of anatomical knowledge. So far as I was able to ascertain, there was little attempt to apply animal anatomy to humans. Their "science" is based largely on tradition and empiricism, rather than on investigations. The heart along with the spleen is believed to be the seat of the emotions.

They considered each half of the human body as divided into three regions which are associated with different positions along the radial arteries. The status of the organs in these various regions can thus be determined from the character of the corresponding pulse:

Finger	Name of Position	Organ	
Ring Long	Ts'un (spring) Quan (gate)	Right—Lungs, stomach, spleen	Left—Heart, liver, gallbladder
Index	Ch'ih (foot)	Small intestines	Large intestines, kidney, bladder

There are eight main types of pulse: Fou ("floating"), Ch'en (sinking), Ch'ih (slow), Shu (quick), Si (small), Ta (big), Tan (short), Chang (long). Each of these types and subdivisions will be briefly discussed (after Lui[2]):

1. Fou (floating pulse). It "floats" to the surface of the skin. When the fingers are put on the wrist, it is easily felt. This pulse indicates sickness in the outer system, a head cold. The Chinese theory is that such a cold should be broken up by making the patient perspire.

The "Fou" pulse has six branches:

(a) Hung (deluge)—"floats" very strongly; indicates inflammation and fever. On the right wrist, at the place called Ts'un, such pulse shows inflammation of the lungs.

(b) Hsu (weak)—float is weak; shows low vitality and that the respiratory system is in danger.

(c) San (disperse)—float is scattering; shows serious weakness. If this pulse is on Ch'ih of the left hand, the weakness is in the kidneys and bladder.

(d) K'ung (hole)—floats and feels "like the stock of a green onion"; indicates an anemic condition.

(e) Ko (outer-skin)—floats by a touch "like that of the surface of a leather drum." It shows an unbalanced system: outer body, strong; inner, weak.

(f) Jo (feeble) is floating and soft; indicates rheumatism.

2. Ch'en (sinking pulse) sinks to the bottom; indicates illness "hidden deep in the diseased organ." It has three branches:

(a) Lao (prison). Sinks to a bottom, with the sensation of solid ground; it shows a very weak and very cool system.

(b) Fu (prostrate). Sinks to the bone and has a feeling hardly sensed by the fingers even by hard down pressure. Shows evil and nervous condition.

(c) Jo (infirm). Sinks and beats softly; shows a loss of energy.

3. Ch'ih (slow pulse). This beats slowly, less than three beats to one respiration; indicates a weak system and a "cold condition of blood." This pulse has four branches:

(a) Huan (harmony). Pulse is slow and even. It is normal. The beat is four times to one respiration.

(b) Se (stagnant). Pulse slow and stagnant. Shows anemic condition.

(c) Chi (indigest). Slow; sudden stop; beats again and again. It indicates a congestion, indigestion, or hypochondriac condition.

(d) Tai (replace). Slow and stopping pulse, repeating in exactly the same time; shows life in a dangerous condition.

4. Shu (quick pulse). The beat is rapid, generally more than five times to one respiration. When the beat reaches seven to eight times to one respiration, the patient is in a crisis. Fever is indicated by rapid pulse. There are four different branches:

(a) Wat (slipping). Pulse is quick and slipping; phlegmatic condition.

(b) Chin (tight). Quick, and tied as if tugging; indicates a "cold system," sometimes means an inflamed condition.

(c) Tsu (working). This pulse is quick, stops suddenly, beats quickly again, and continues in that way. The irregularity shows extreme fever.

5. Si (small pulse). This is very tiny, feeble to the touch. It shows a "kidney insufficiency in semen."

6. Ta (big pulse). This has a big beat; it feels like something large; shows a strong system, stopped or sluggish.

7. Dan (short). The beats feels very short; usually indicate that the respiratory system is in a weak condition.

8. Chang (long pulse). This pulse beats so long that it seems like a thread; generally indicates a strong constitution.

In addition to the eight pulses there are some peculiar pulses which show an exhausted condition of the organs. In a weak condition of the heart, the pulse is not active; of the liver, it beats like a bird pecks—again and again; of the stomach, beats as a loose knot; of the lungs, beats like a foam on the top of water; of the kidneys, beats like a large stone in the bottom of the water and which cannot be moved.

The normal pulse for the various organs: Hung for the heart; Yen (beats as an arrow shoots) for the liver; Huan for the stomach; Se for the lungs; Ch'en for the kidneys. These have been "described" above.

DISCUSSION

It is quite possible that some ancient Chinese did appreciate the relationship between the heart and the circulation of the blood. However, there is no anatomical or physiological basis to the ancient Chinese concept of the pulse. We are aware of pulse variations and the suggestive types of pulse in a few diseases, but cannot appreciate the relationship between the character of the pulse and the state of certain organs. The statement of the Chinese that foreign fingers are not sufficiently sensitive to detect fine pulse differences does not seem reasonable.

One thing is difficult to understand. These practitioners of ancient Chinese medicine have not had a formal education and have never seen an autopsy, test tube or microscope. Yet, like many others who have seen them examine patients, I have repeatedly been amazed at their almost uncanny ability to determine the seat of disease from the pulse alone.

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